

REMARKS

Claims 1-21 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 10, 14, 17 and 18 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Jansen et al. (U.S. Pat. No. 6,388,420). This rejection is respectfully traversed.

Jansen et al. describe a rotor position and velocity tracker adapted to decouple fundamental frequency effects of a zero sequence signal of an induction machine from the zero sequence signal and to use a resulting error signal to estimate a position and a velocity of a rotor of the induction machine (Abstract). A *rotor position dependent error term* ε_f can be used to drive a controller 18, which may include a phase-locked loop or other tracking filter/observer 17, to obtain an estimate of *rotor* velocity which can be used by an integrator 20 to estimate the *rotor* position (Col. 4, lines 29-33; FIG. 1).

The tracking filter/observer 17 of Jansen et al. does not estimate *flux* velocity, nor does the integrator 20 of Jansen et al. estimate *flux* position. Thus the tracker of Jansen et al. does not anticipate "...a proportional-plus-integral (PI) controller driven by the control signal to estimate a flux angular speed of the motor; an integrator that integrates the estimated flux angular speed to estimate a flux angular position; and a harmonic decoupling block that: uses the estimated flux angular position to obtain a plurality of correction signals representing a harmonic signal that is harmonic relative to the

estimated flux angular speed; and subtracts the correction signals from the input current to decouple the harmonic signal from the input current.” Applicant respectfully submits that claim 10 (and claim 11 dependent thereon) should be allowed.

Claim 14 recites “...injecting a control signal into an input current to the motor to drive a proportional-plus-integral (PI) controller to estimate a flux angular speed of the motor; integrating the estimated flux angular speed to estimate a flux angular position; using the estimated flux angular position to obtain a plurality of correction signals representing a harmonic signal that is harmonic relative to the estimated flux angular speed; and subtracting the correction signals from the input current to decouple the harmonic signal from the input current.” As previously discussed with reference to claim 1, the tracking filter/observer 17 of Jansen et al. does not estimate *flux* velocity, nor does the integrator 20 of Jansen et al. estimate *flux* position. Applicant respectfully submits that claim 14, and claims 15-17 dependent on claim 14, should be allowed.

Claim 18 recites “...a proportional-plus-integral (PI) controller driven by the control signal to estimate a flux angular speed of the motor; an integrator that integrates the estimated flux angular speed to estimate a flux angular position; and a harmonic decoupling block that uses the estimated flux angular position to obtain a plurality of correction signals representing a harmonic signal that is harmonic relative to the estimated flux angular speed, and subtracts the correction signals from the input current to decouple the harmonic signal from the input current.” As previously discussed, the tracking filter/observer 17 of Jansen et al. does not estimate *flux* velocity, nor does the integrator 20 of Jansen et al. estimate *flux* position. Applicant respectfully submits that claim 18, and claims 19-21 dependent on claim 18, should be allowed.

REJECTION UNDER 35 U.S.C. § 103

Claims 11, 15 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Jansen et al. (U.S. Pat. No. 6,388,420). This rejection is respectfully traversed.

A subtractor 12 of the tracker of Jansen et al. subtracts an estimate of a fundamental excitation component of a zero sequence signal to provide a rotor position indicator component (col. 3, line 37 - col. 4, line 5). The fundamental excitation component is of the form $I_{0s12} \sin[(\omega_i + 2\omega_e)t + \gamma]$ where ω_i = signal injection frequency and ω_e = fundamental excitation frequency (col. 3, lines 37-49). The fundamental excitation component described in Jansen et al. does not appear to be a harmonic signal. Accordingly, subtraction of the component from the zero sequence signal does not decouple a harmonic signal from the input current.

The tracker of Jansen et al. does not teach or suggest the recitations of claims 11, 15 or 19. Applicant submits that claims 11, 15 and 19 should be allowed.

ALLOWABLE SUBJECT MATTER

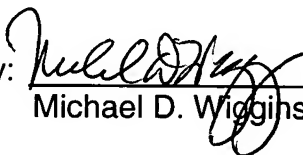
Claims 1-9 have been allowed. The Examiner states that claims 12, 13, 16, 20 and 21 would be allowable if rewritten in independent form. In response to the statement in the Office Action of reasons for the indication of allowable subject matter, Applicant respectfully submits that the claims are allowable based on the language used therein. Applicant respectfully reserves the right to amend claims 12, 13, 16, 20 and 21 into their originally allowable forms at a later date if needed.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this response is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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